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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/878,554	06/11/2001	Xinghao Chen	FIS920010060US1	5168

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ORRICK, HERRINGTON & SUTCLIFFE, LLP
IP PROSECUTION DEPARTMENT
4 PARK PLAZA
SUITE 1600
IRVINE, CA 92614-2558

EXAMINER	
TORRES, JOSEPH D	
ART UNIT	**PAPER NUMBER**
2133	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/878,554	CHEN ET AL.	
	Examiner	Art Unit	
	Joseph D. Torres	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,6 and 8-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,6 and 8-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 11/17/2006 have been fully considered but they are not persuasive.

The Applicant contends, "Applicant initially notes that Song does not teach identifying potential faults to be tested by the test by backtracing "in a single detection pass," as is required by claims 2, 8, 9, and 10.

Instead Song requires that two separate backtracing steps be performed as part of the PPST algorithm to determine the faults. The algorithm disclosed in Song is replicated below:

> For every set of test patterns,
> Perform true-value simulation.
> For every active (i.e. undropped) FFR,
> **Backtrace from its stem (PO) upto FOB's or PI's**
> Propagate the stem fault to a PO, if necessary
> If any stem fault is detected
> **Backtrace from the stem, collecting detection information**
> If all faults in the FFR have been detected
> Drop the FFR
> End
> [Col. 2, Page 707 - Col. 1, Page 708, emphasis added].

Song discloses the performance of two separate backtracing steps, such that "[t]he set of faults detected by a set of test patterns is determined by a second backtracing inside FFR's." Paragraph 4, Col. 1, Page 708. Thus, Song discloses the performance of a first and second backtracing step (Paragraph 1, Col. 2, Page 708),

and therefore does not teach or suggest identification of the potential faults to be tested by the test by backtracing "in a single detection pass" as is required by claims 2, 8, 9, and 10".

The Examiner disagrees and asserts that paragraph 4, Col. 1, Page 708 in Song teach that **detection information** for any undetected fault (Note: Paragraph 1, Col. 1, Page 708 teaches that undetected faults are identified in stem analysis prior to the second backtracing and immediately after the first backtracing) is determined in a second backtracing to gather detection information. Song explicitly teaches identifying the undetected fault in Paragraph 1, Col. 1, Page 708 in Song and gathering detection information during a second backtracing after the undetected fault has been identified during stem analysis prior to the second backtracing and immediately after the first backtracing.

The Applicant contends that there is no memory taught in Song.

The Examiner would like to point out that Paragraph 3, Col. 1, Page 706 in Song explicitly incorporates by reference Abramovici (Abramovici, M.; Menon, P.R.; Miller, D.T.; Critical Path Tracing - An Alternative to Fault Simulation; IEEE 1983; pages 214-219) as a teaching reference. Paragraph 2, Col. 1, Page 214 in Abramovici teaches that which is extremely well known in the art (check out the dates of these Prior Arts) that critical path tracing such as back tracing is a testing algorithm designed for VLSI including se sequential logic (memory). Paragraph 2, Col. 1, Page 214 in Abramovici teaches that sequential logic (memory) is treated as combinational logic during testing.

However; critical path testing, which includes back tracing, is designed for and applies to sequential logic (memory) as well, by design.

The Applicant contends Maruyama does not teach or suggest identification of the potential faults to be tested by the test by backtracing "in a single detection pass". The Examiner would like to point out that out that Song, as pointed out above, teaches identification of the potential undetected faults to be tested by the test by backtracing "in a single detection pass". One of ordinary skill in the art at the time the invention was made, as pointed out above, would have known that critical path tracing such as back tracing is not only applicable to sequential logic, but is designed for VLSI with sequential logic. Col. 12, lines 9-15 in Maruyama teach the of true value simulation (i.e. good machine simulation) performed on circuit 100 in Figure 8 of Maruyama (Note: circuit 100 is a typical integrated circuit containing sequential logic and memory)

The Examiner disagrees with the applicant and maintains all rejections of claims 2, 6 and 8-13. All amendments and arguments by the applicant have been considered. It is the Examiner's conclusion that claims 2, 6 and 8-13 are not patentably distinct or non-obvious over the prior art of record in view of the references, Song et al. (Song, O.; Menon, P.R.; Parallel pattern fault simulation based on stem faults in combinational circuits, Proceedings International Test Conference, 10-14 Sept. 1990, Pages:706 – 711) [hereafter referred to as Song] in view of Maruyama; Daisuke (US 6205567 B1) as applied in the last office action, filed 04/10/2006. Therefore, the rejection is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 2, 6 and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (Song, O.; Menon, P.R.; Parallel pattern fault simulation based on stem faults in combinational circuits, Proceedings International Test Conference, 10-14 Sept. 1990, Pages:706 – 711) [hereafter referred to as Song] in view of Maruyama; Daisuke (US 6205567 B1).

See the Non-Final Action filed 04/10/2006 for detailed action of prior rejections.

Conclusion

This is an RCE of applicant's earlier Application. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on

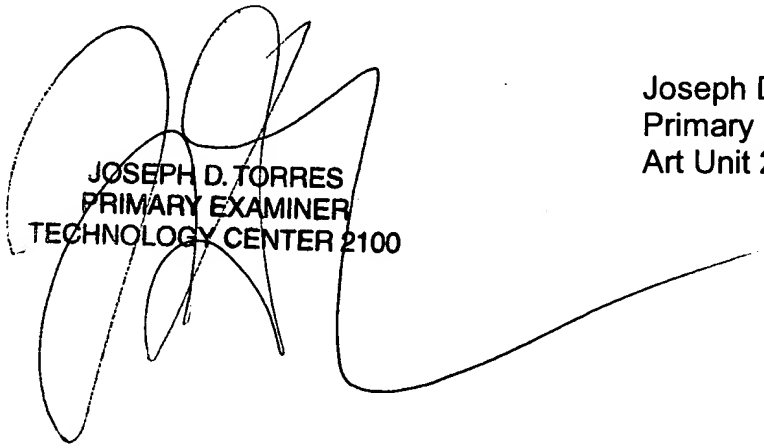
the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Joseph D. Torres, PhD
Primary Examiner
Art Unit 2133